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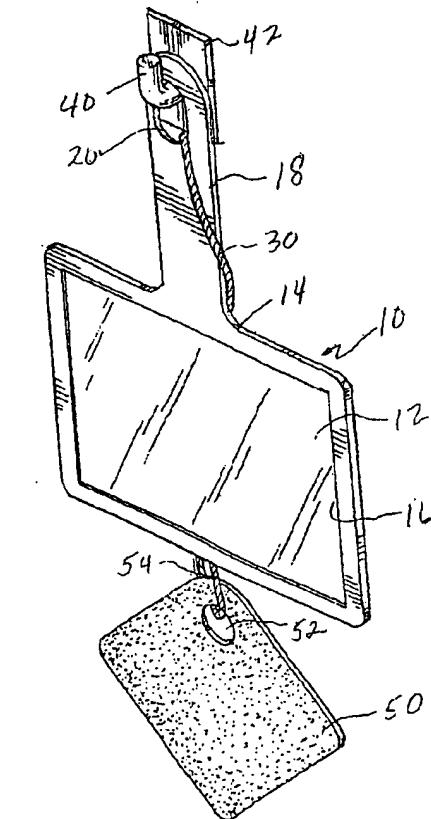
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(54) Title: ANTI-FOGGING MIRROR DEVICE AND METHOD



(57) Abstract: A hand held mirror assembly including a mirror (10) and a small plastic, preferably nylon pad (50). The pad is connected to the mirror with an elastic cord (30). The mirror is rubbed with the pads so as to generate static electricity on the mirror, which repels water vapor from condensing on the mirror so the mirror does not fog. The mirror is especially useful for shaving in the shower.

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ANTI-FOGGING MIRROR DEVICE AND METHOD

BACKGROUND OF THE INVENTION

1. *Field of the Invention:* This invention relates to a mirror that reduces or eliminates fogging when used in a shower or bath and the method of preventing fogging with the mirror.

2. *General Background and State of the Art:* Many men shave in the shower. They often claim that it makes shaving easier and is kinder to their skin. The warm water and steam softens the hair, which reduces the force needed to cut it. In turn, this makes shaving faster, and reduces the likelihood of skin irritation and ingrown hairs. Shaving in the shower also allows a man to wash his face first, rinse off in the shower, and apply shaving cream while the skin remains wet. An additional benefit is that hair, soap, and foam rinses down the drain, so there is no clean up.

Although a man can shave his face without a mirror, shaving with a mirror yields superior results. With a mirror, a man can see where on the face he has shaved so that he will not miss areas. Having a mirror is especially important when trimming sideburns, beards, and moustaches. Women also shave in the shower, but they shave their legs and underarms, which they can see without a mirror.

Ordinary mirrors fog up in the shower. Due to this problem, there has long been a need to create a fog free mirror or a device to de-fog the mirror. The prior art devices have numerous drawbacks.

The prior art devices generally attach to the shower permanently so that there is limited movement of the mirror. Most shower mirrors require installation and are expensive. Most prior art devices work on the principle that if the temperature of the mirror is equilibrated with the temperature of the water vapor, the vapor does not condense on the mirror so that the mirror will not fog. Many different heating devices have been contemplated, including battery generated heat, electrical generated heat, and the shower water running through the mirror device to warm the mirror.

Running water on the outside of the mirror also defogs the mirror, but the water adversely affects the mirror's image. One can use a conventional mirror and splash water onto it occasionally, but the results are less than ideal. The splashed

water often leaves droplets, which adversely affect the reflection. Shortly after water drips off the mirror, fogging begins again. Some use soap or detergent to create a surface that inhibits condensation. These usually drain off the mirror and leave the mirror exposed to water vapor and re-fogging.

5 Though a mirror within a shower is particularly vulnerable to fogging, other mirrors fog as well. Mirrors next to the sink of a bathroom can be exposed to water vapor from a shower or bathtub and will fog over.

INVENTION SUMMARY

10 It is an object of the present invention to disclose and provide a device that can eliminate or significantly slow down the fogging of a mirror which is exposed to water vapor. Another object is to do so at a low cost and in way that eliminates external power sources or battery power. Another object is the disclosure of a device that is very simple to use. Another object of the present invention is to disclose a method for limiting or preventing fogging of a mirror.

15 These and other objects of the present invention are evident in the detailed description of the exemplary embodiments.

20 The present invention relies on producing a temporary charge of static electricity on the surface of the mirror by rubbing that surface with electrostatic charge inducing material. One such material is a loosely woven pad of nylon or other plastic filaments. The pad is rubbed on the mirror surface, preferably before the shower is turned on, and the electrostatic charge on the surface of the mirror repels water vapor from forming fog on the mirror.

25 The invention may be an assembly of a mirror and the padded plastic material. The mirror can have a handle so that the user can hold it while rubbing the mirror surface with the pad. The user can also hold the mirror during shaving. The mirror may have structure for being mounted within the shower, and the mounting may allow the mirror to be removed and handheld. The pad can mount on a tether so that it stays with the mirror. That tether can be elastic to allow the user to move the pad to the entire mirror surface.

The instant process is simpler and offers convenient solutions to the drawbacks of prior art. By rubbing materials containing polymers, preferably nylon, across a mirror, a charge of static electricity is developed, which repels water, causing a fog-free mirror.

5 This means that at a low price, shaving in the shower can be greatly enhanced. A mirror of any size and configuration can be used. It can be compact and portable for traveling. It need not be installed. It can be moved to any angle or direction in the shower for ease of viewing and shaving. There is no risk of electrocution, and no replacement heating power source is necessary, such as replacement of batteries.
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BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the mirror assembly and associated components of the present invention.

15 FIG. 2 is a perspective view of the mirror assembly and associated components of the present invention in use.

FIG. 3 is a representation of the mirror assembly and associated components of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention is used with a mirror, and mirror 10 is representative.
20 The mirror has a mirrored piece of glass 12. A glass mirror is not required, and there are many other types of mirrors that could be used. The mirror glass 12 mounts on or in a plastic or metal support 14. Wood could also be used, but it is not an ideal material to use in a shower or other high-humidity environment. Mirror support 14 has a mirror-mounting surface 16 that conforms to the shape of the mirror.

25 A handle 18, integral with the mirror support 14, allows the user to hold the mirror. Handle 18 has an opening 20. The opening serves two purposes. It provides an opening through which a tether 30 extends and can be tied. The opening also allows the mirror to hang from a hanger 40 on hanger support 42. The hanger support can be mounted within a shower or at another location. Opening 20 does not have to
30 be on handle 18. It could be on a flange that extends outward from part of the mirror

support 14. The mirror support itself may provide a grip, and the mirror support can be shaped to facilitate gripping.

Tether 30 also connects to pad 50. In the exemplary embodiment, pad 50 is square (FIG. 3) about 2" by 2" (5 cm x 5 cm). It also may have a rounded corner 54 (FIG. 1). Tether 30 loops through a small opening 52 in the pad. Thus, the tether maintains the pad near the mirror 10. Note that the tether is long enough that the pad can reach all areas of the mirror surface 12. In FIG. 1, the tether is longer, allowing the pad to hang below the mirror when the mirror hangs from hanger 40. Preferably, the tether is elastic to pull the pad closer to the mirror when the pad is not being used.

Pad 50 is formed of plastic material capable of producing a static electric charge on a surface 12 of the mirror when the pad is rubbed on the surface. In the exemplary embodiment, the pad is formed of plastic/polymer material. Woven or bonded filaments of nylon are the preferred material. Pad 50 may have one surface of the woven or bonded plastic filaments, or the entire pad may comprise that material. The filaments may be continuous, crimped or undulated. If the material is on one side only, the reverse side may be formed of another material that is comfortable to hold. The pad alternatively could mount on a small handle (not shown).

The user rubs the mirror surface 12 with the plastic material on the pad 50. See FIG. 2. The tether is long enough for the pad to reach the entire surface of the mirror. If the tether is elastic, it needs to be long enough when fully stretched to reach the entire mirror surface.

The rubbing produces static electricity on the mirror surface. That static electricity repels vapor in the shower and prevents the mirror from fogging. Normally, the rubbing should occur before beginning a shower, i.e., before generating vapor from hot water. The charge should last for at least the length of a shave and can last for several showers. The presence of water can dissipate charge, so the mirror should be positioned outside the shower stream. Before rubbing of the pad on the mirror begins, the mirror and pad should be dry for good results.

During particularly long showers or when the stream of water hits the mirror, static electricity on the mirror may dissipate. The user can observe the loss of static electricity and the subsiding of the anti-fogging condition by observing buildup of

fog on the mirror surface. The user then will produce a second temporary charge of static electricity on the front surface of the mirror by rubbing the bundle of filaments on the surface a second time.

While the specification describes particular embodiments of the present invention, those of ordinary skill can devise variations of the present invention without departing from the inventive concept.

I claim:

1. The method of providing a temporary anti-fogging condition on the surface of a mirror used by a person while taking a shower comprising the step of:
 - producing a temporary charge of static electricity on the surface by rubbing the surface with an electrostatic charge inducing material.
2. The method of claim 1 wherein the step of producing a temporary charge of static electricity on the surface further comprising rubbing the surface with the material wherein the material is a loosely woven pad of plastic filaments.
3. The method of claim 2 wherein the plastic filaments are nylon.
4. A method of providing a temporary anti-fogging condition to a mirror used by a person while shaving in a hot water shower, comprising steps of:
 - providing filaments of plastic material in a pad-like configuration bundle to be hand-held; and
 - producing a temporary charge of static electricity on a front surface of the mirror by rubbing the bundle of filaments on the surface preparatory to use of the mirror in the shower.
5. A method of claim 1 wherein the step of providing comprises providing the filaments of a plastic polymer material.
6. The method of claim 1 comprising the further steps of:
 - determining when the temporary anti-fogging condition subsides by observing buildup of fog on the mirror surface; and
 - producing a second temporary charge of static electricity on the front surface of the mirror by rubbing the bundle of filaments on the surface a second time while using the mirror in the shower.
7. An assembly of mirror and mirror associated components to facilitate providing the mirror with a temporary anti-fogging condition while using the mirror in a hot water shower, wherein the mirror associated components to be used with the mirror comprise:

a pad of plastic material capable of producing a static electric charge on a surface of the mirror when rubbed thereon; and

means for connecting pad to the mirror to hold the pad assemblage to the mirror and allowing the pad to be rubbed on the surface.

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8. The assembly of claim 7 wherein the pad comprises:

a bundle of plastic filaments loosely woven in a pad-like configuration.

9. The assembly of claim 7 wherein the means for connecting comprises:

a tether extending between the mirror and the pad.

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10. The assembly in claim 7 wherein the means for connecting comprises:

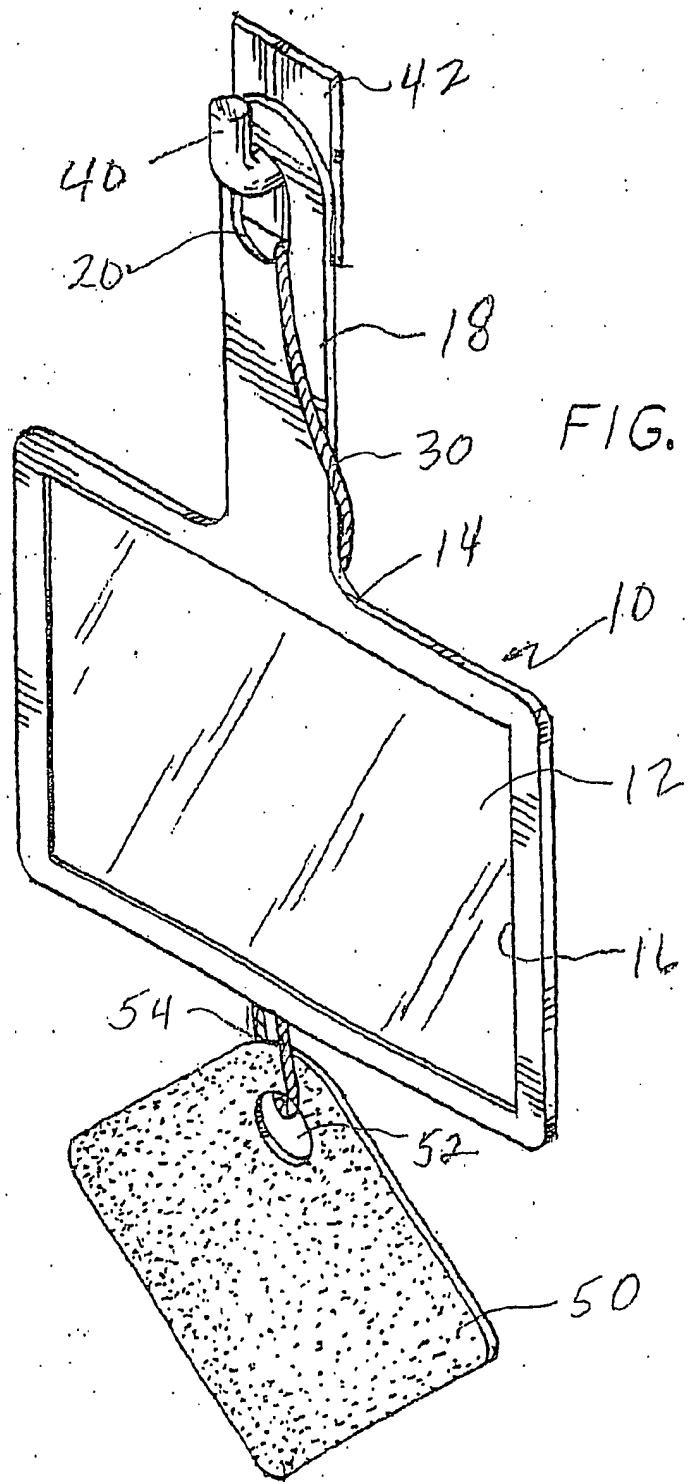
a pair of mechanically releasably interengaging parts where one part is provided on the mirror and another one of the parts is provided on the pad.

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11. The assembly of claim 7 wherein the means for connecting comprises:

an elastic cord connected between the mirror and the pad.

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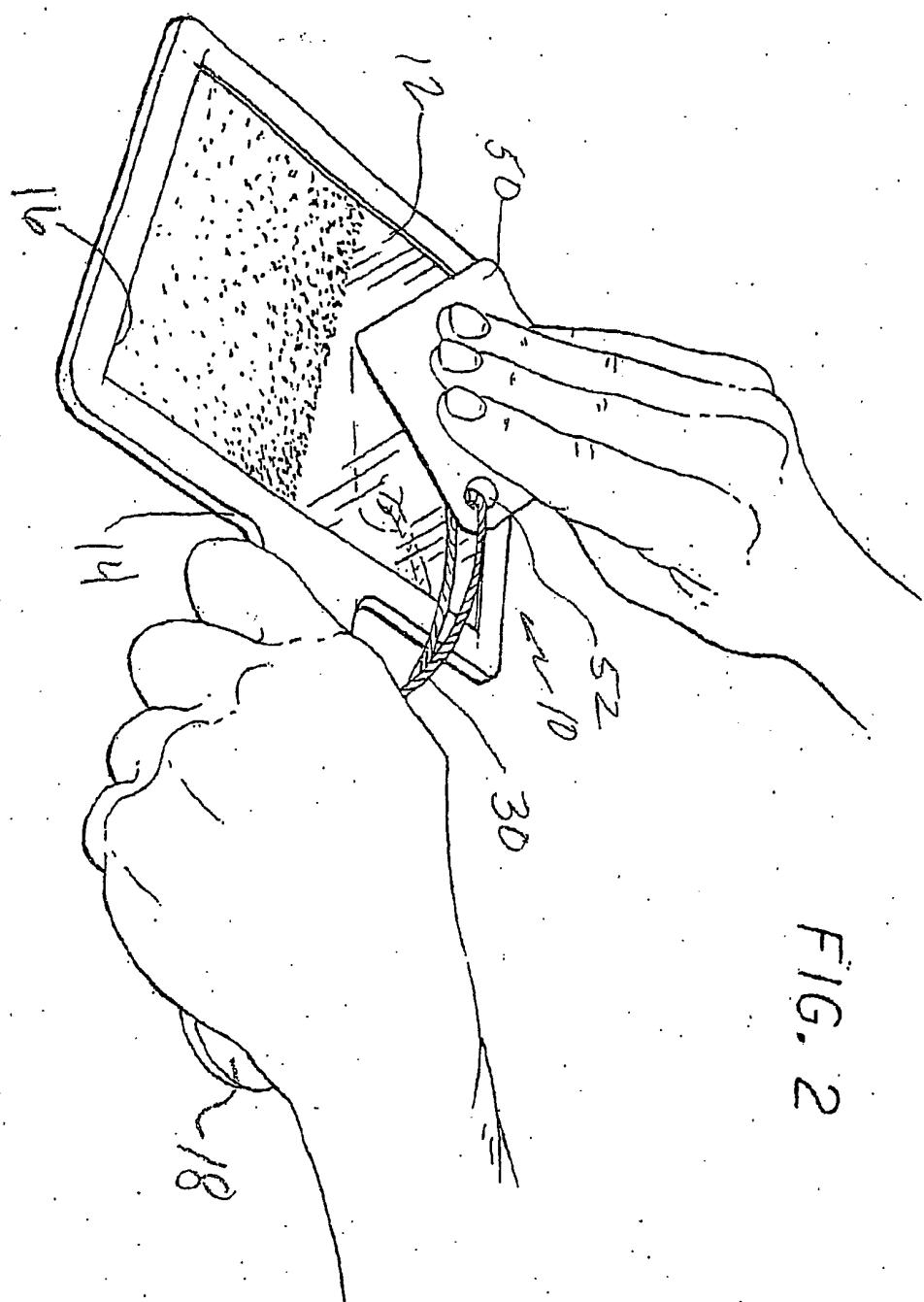


FIG. 2

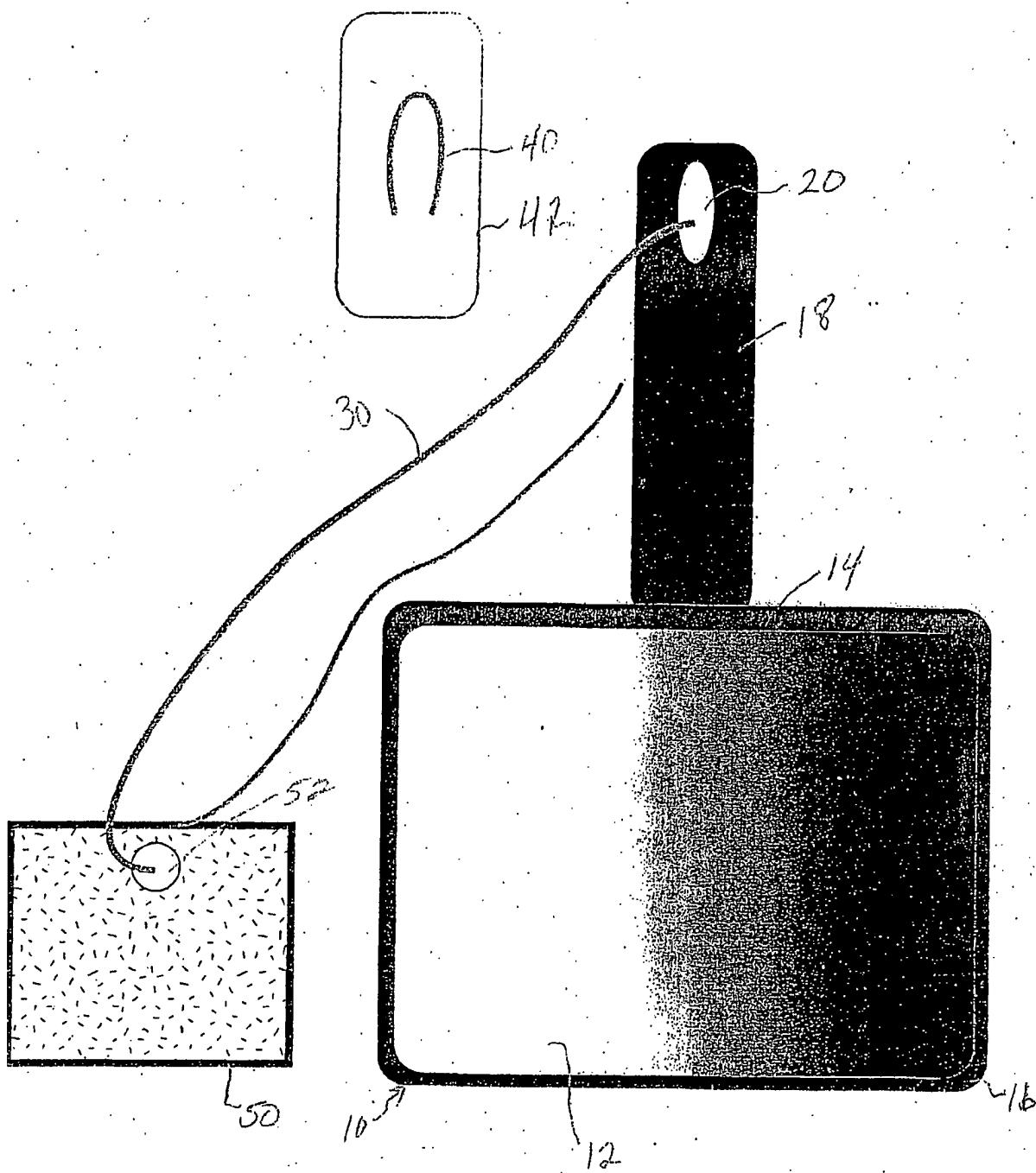


FIG. 3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US01/10084

A. CLASSIFICATION OF SUBJECT MATTER		
IPC(7) :G02B 5/08, 7/182 US CL :359/507, 512, 871, 882 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) U.S. : 359/507, 509, 512, 871, 882		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched NONE		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) NONE		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,705,470 A (FARIS) 06 January 1998 (06.01.1998), see column 4, lines 29-44.	1
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Y		2-11
Y	US 3,908,218 A (OISHI) 30 September 1975 (30.09.1975), see entire document.	2-11
Y	US 4,159,883 A (MIZELL) 03 July 1979 (03.07.1979), see entire document.	2-11
Y	US 4,789,262 A (SANCHEZ) 06 December 1988 (06.12.1988), see entire document.	7-11
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
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Date of the actual completion of the international search 07 JUNE 2001	Date of mailing of the international search report <u>16 JUL 2001</u>	
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-9290	Authorized officer <i>Shaun S. Krype</i> RICKY D. SHAFER Telephone No. (703) 308-0956	

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